ABSTRACT OF THE DISCLOSURE

Output light spectrum P2(λ) data from an optical amplifier and input light spectrum P1(λ) data of signal light are prepared, the difference between the P2(λ) and a value obtained by multiplying the P1(λ) by a provisional gain GT is determined (Steps S232), for the obtained spectrum data, a noise removing process such as a moving average process and the like is performed and then, a spline interpolation process is also performed, whereby ASE light spectrum P3(λ) data is prepared and an ASE light level P ASE is determined (Steps S233 through S235). In addition, a noise figure-measuring device 10 calculates the number of channels of WDM light and signal light wavelengths of the respective channels based on the P1(λ) or P2(λ), and performs analysis to calculate a noise figure NF and the like of an appointed wavelength range around the center of each wavelength thus calculated.